Title: SKELETAL-TARGETED RADIATION TO TREAT BONE-ASSOCIATED PATHOLOGIES

IN THE CLAIMS

- 1. (Previously Presented) A therapeutic method for treating a bone-associated cancer while reducing the incidence of sustained renal dysfunction comprising:
 - (a) hydrating a human cancer patient;
 - (b) parenterally administering a dose of 650-825 mCi/m² ¹⁶⁶Ho-DOTMP to said patient in an aqueous vehicle comprising an effective antiradiolytic amount of a pharmaceutically acceptable radioprotectant;
 - (c) administering a dose of about 140-200 mg/m² melphalan to the patient; and
- (d) providing the patient with bone marrow transplantation and/or restoration; wherein the patient is not subjected to total body irradiation in conjunction with the therapeutic method.
- 2. (Previously Presented) The method of claim 1 wherein the patient is refractory to treatment, or in relapse after treatment, with chemotherapy and/or total body irradiation.
- 3. (Previously Presented) The method of claim 1 wherein the dose is effective to deliver a mean dose of about 15-30 Gy to the bone marrow of said patient.
- 4. (Original) The method of claim 3 wherein about 200 mg/m² melphalan is administered in step (c).
- 5. (Original) The method of claim 1, 2 or 3 wherein the cancer is multiple myeloma.
- 6. (Previously Presented) The method of claim 1, 2 or 3 wherein the cancer is metastatic breast cancer or metastatic prostate cancer.
- 7. (Original) The method of claim 1, 2 or 3 wherein the cancer is Ewing's sarcoma.

- 8. (Previously Presented) The method of claim 1, 2 or 3 wherein the radioprotectant is an ascorbate or gentisic acid.
- 9. (Previously Presented) The method of claim 8 wherein the ascorbate is ascorbic acid at a concentration of about 35-75 mg/ml.
- 10. (Original) The method of claim 9 wherein the vehicle is buffered to about pH 7-8.
- 11-13 (Cancelled).
- 14. (Previously Presented) A therapeutic method for treating a bone-associated cancer in a human patient comprising:
 - (a) parenterally administering a dose of ¹⁵³Sm-EDTMP;
- (b) administering a dose of about 140-200 mg/m² of melphalan to said patients, wherein steps (a) and/or (b) are effective to suppress the bone marrow of a human patient; and
- (c) providing the patient with bone marrow transplantation and/or restoration; wherein the patient is not subjected to total body irradiation in conjunction with the therapeutic method.
- 15. (Previously Presented) The method of claim 14 wherein step (c) is carried out while the bone marrow is suppressed by steps (a) and (b).
- 16. (Previously Presented) The method of claim 14 wherein the patient is refractory to treatment or in relapse after treatment with chemotherapy and/or total body irradiation.
- 17. (Previously Presented) The method of claim 14 wherein the patient is hydrated prior to, during and/or after step (a).
- 18. (Currently Amended) The method of claim 14, 15 or 16, wherein the bone-associate bone-associated cancer is multiple myeloma.

- 19. (Currently Amended) The method of claim 1 or 14 whereas wherein the bone marrow transplantation or restoration comprises bone marrow transplantation, stem cell transplantation and/or administration of a colony stimulating factor.
- 20. (Previously Presented) The method of claim 14, 15, 16 or 17 wherein the dose of ¹⁵³Sm-EDTMP is delivered by intravenous infusion or injection in an aqueous vehicle comprising an effective antiradiolytic amount of a pharmaceutically acceptable radioprotectant.
- 21. (Currently Amended) The method of claim 20 wherein the radioprotectant is an ascorbate or gentistic gentisic acid.
- 22. (Previously Presented) The method of claim 21 wherein the ascorbate is ascorbic acid at a concentration of about 35-75 mg/ml.
- 23. (Previously Presented) The method of claim 14, 15, 16 or 17 wherein the dose delivers about 30-40 Gy of radiation to the bone marrow of the patient.
- 24. (Previously Presented) The method of claim 14, 15, 16 or 17 wherein the dose delivers about 15-30 Gy of radiation to the bone marrow of the patient.
- 25. (Previously Presented) The method of claim 14, 15, 16 or 17 wherein about 200 mg/m² of melphalan is administered.
- 26. (Previously Presented) A therapeutic composition comprising:
 - (a) an amount of ¹⁵³Sm-EDTMP effective for suppressing the bone marrow of a human;
 - (b) an effective antiradiolytic amount of a pharmaceutically acceptable radioprotectant; and
 - (c) an aqueous vehicle.

27. (Previously Presented) The composition of claim 26 wherein the amount of ¹⁵³Sm-EDTMP is effective to deliver a dose of at least about 15 Gy of radiation to the bone marrow of a human patient.

- 28. (Previously Presented) The composition of claim 26 wherein the amount of ¹⁵³Sm-EDTMP is effective to deliver a dose of about 30-40 Gy of radiation to the bone marrow of a human patient.
- 29. (Previously Presented) The composition of claim 26 wherein the amount of ¹⁵³Sm-EDTMP is effective to deliver a dose of about 20-30 Gy of radiation to the bone marrow of a human patient.
- 30. (Previously Presented) The composition of claim 26 wherein the amount of ¹⁵³Sm-EDTMP is effective to deliver a dose of about 250-3000 MBq/kg to a human patient.
- 31. (Previously Presented) The composition of claim 26 wherein the amount of ¹⁵³Sm-EDTMP is effective to ablate the bone marrow of a human.
- 32. (Previously Presented) The composition of claim 26 wherein the radioprotectant is an ascorbate or gentisic acid.
- 33. (Previously Presented) The composition of claim 32 wherein the ascorbate is ascorbic acid at a concentration of about 35-75 mg/ml.
- 34. (Previously Presented) The composition of claim 26 wherein the vehicle is buffered to about pH 7-8.
- 35. (Currently Amended) The method of claim 6 wherein the cancer is metastatic metastatic breast cancer.